

WOOTTON WAWEN C.E. PRIMARY SCHOOL

SCIENCE POLICY

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of Science at Wootton Wawen School.

This policy is a working document to provide guidance and information for teaching staff. Through the policy and the associated schemes of work we hope to ensure breadth, balance, continuity and progression for all the pupils.

What is Science?

Science education is the process by which children develop an understanding of themselves and the physical and natural world around them. Through a practical approach they should acquire scientific knowledge and skills which will enable them to solve problems.

Rationale

Science is important because it builds on the inherent abilities which children have so they become more adept at applying scientific processes to find out about themselves and the world around them. Thus developing their knowledge through attitudes, skills and activities within a context to which they can relate and to encourage co-operation and perseverance.

The subject encourages children to understand how scientific ideas contribute to industry, business, the environment and the quality of life.

Aims

Our aims in teaching Science are:

1. To develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
2. Develop in children the skills necessary for them to investigate science for themselves. Skills such as observation, classification, fair testing, making and testing hypotheses, taking accurate measurements, designing investigations and drawing conclusions.
3. Encourage communication and co-operation. The pupils should be involved in planning, decision making and deduction with their peers.
4. Involve the children in practical activities which engage their interests and from which they can derive conclusion and.....
5. Acquire a good scientific knowledge.
6. To build on pupils' curiosity and sense of awe of the natural world
7. To promote a 'healthy lifestyle' in our pupils.
8. To encourage in children a respect for the environment, so that they know how to care for living things and appreciate the damage some activities cause.
9. To develop pupils' use of literacy, mathematical and computing skills.
10. To work safely. Pupils should be aware of the dangers involved in carrying out certain practical activities, and they should be able to handle equipment correctly and safely.

The Teaching and Learning of Science

Science is a core subject. The skills, knowledge and concepts we teach are set out in the National Curriculum 2014 programme of study. While it is important that pupils make

progress, it is also vital that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage.

‘Working scientifically’ specifies the understanding of the nature, processes and methods of Science for each year group. It should not be taught as a separate strand and is embedded within the content of biology, chemistry and physics. Guidance is given in the programmes of study of how this can be achieved.

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

In order to fulfil the requirements of the National Curriculum and to ensure continuity and progression throughout the school, the schemes of work have been developed by the co-ordinator in consultation with the staff.

In Foundation stage, science forms the basis of one of the seven areas of learning.

In Key Stage 1 the units studied are based on programmes of study:

Year 1	Plants, Animals (including humans), Everyday Materials, Seasonal Changes
Year 2	Living Things and their habitats, Plants, Animals (including humans), Uses of Everyday Materials

In Key Stage 2, where pupils are taught in three classes across four year groups, science is taught as a two-year rolling programme:

Year 1 2015/16	Humans, Evolution, Materials - changes in state/ properties, Forces, Sound.
Year 2 2016/17	Living things and their habitats, Materials – changes in state/ properties, Light, Space and Electricity

All classes will cover the same topics during the year but with a different focus.

Science is taught weekly. Approximately one and a half hours per week is spent on science throughout the year. This time allocation is flexible and the number of hours spent may vary from term to term according to the topic focus.

There is no specialist teaching in science and so it is the responsibility of the class teacher to plan, organise and assess lessons.

Learning is mainly in mixed-ability groups within their class differentiated tasks and support and will also include independent and partner work.

Teachers use a variety of interactive teaching methods to deliver the curriculum and achieve set learning objectives.

Key features of science include:

- Lessons have clear learning intentions and success criteria
- Appropriate pace of learning is in place and high expectations maintained
- Account is taken of pupils’ prior learning
- High standards of presentation are expected
- Pupils are regularly given opportunities to plan, predict, investigate and evaluate different types of practical activities.
- Good use is made of a wide range of resources
- Pupils are praised effectively to encourage and motivate them and are well supported according to their needs
- ICT is used to enhance learning and teaching experiences

- Pupils are aware of the importance of scientific work to everyday life and make relevant links
- Pupils are encouraged to share responsibility for their own learning

Recording Science

The way in which pupils record and present their work will vary according to the nature of the activity. Frequent dialogue is encouraged between the pupil and both the teacher and his or her peers. This is useful to ascertain problems, to discover children's ideas and to assess their understanding. Written reports and diagrams should be accurate and pupils are encouraged to use scientific vocabulary.

Health and Safety

Teachers should have a constant awareness of the possible dangers children may encounter when doing science work. Pupils should be made aware of any dangers and shown how to use equipment safely.

Teachers should follow the recommendations set out in the A.S.E. publication "Be Safe". There is one copy of this in each classroom and additional copies are located in the science resource area. The school's Health and Safety policy gives further information on safety issues.

Assessment, Recording and Reporting

Feedback to the pupils about their own progress in science is achieved through discussions between the teacher and the pupil and the effective marking of written work and the recording of constructive comments (see Marking Policy).

Assessment will determine the children's skills, knowledge and understanding of science and what the next stage in his or her learning should be. Opportunities for assessment should be planned for by the class teacher. Suitable tasks for assessment include: individual discussions in which the pupils are encouraged to appraise their own work, specific assignments for individual pupils and small group discussions, usually in the context of a practical activity.

In the Early Years records are kept on individual pupils' progress against key learning objectives using the school assessment grids.

In Key Stages 1 and 2 teachers record pupil's progress against key learning objectives for each science topic taught, using the school assessment grids. The science co-ordinator is given copies of all class teachers' assessments.

Formal assessment is carried out at the end of Key Stage 1 (year 2) and Key Stage 2 (year 6). Teacher assessments are made using the level descriptions for each attainment target and judging which description best fits each individual child's performance. Parents are informed of their child's performance.

Pupil's progress in science is also reported to parents at consultation evenings held twice a year and through an annual report.

Roles and Responsibilities

The role of the head teacher and the governors is to promote good practise in the teaching of science by supporting the co-ordinator, ensuring the provision of staff in-set training and allocating adequate funding for resources within the constraints of the budget.

The co-ordinator is responsible for developing and monitoring the teaching of Science throughout the school, providing support for colleagues and the purchasing and organisation of resources. They keep up to date with developments within the subject and notify the staff where appropriate.

The class teacher is responsible for planning lessons, differentiating activities, assessments and recording of pupils' achievements.

Links to other subjects

Science can provide opportunities for work in other areas of the curriculum.

English

- Planning and carrying out scientific enquiries
- Taking part in discussions
- Using indexes in non-fiction texts to locate information
- Taking notes
- Recording information through written reports

Mathematics

- Using measuring equipment correctly
- Recording data in tables, charts and graphs
- Examining data to establish trends

Design Technology

- Healthy eating
- Use of electrical circuits in models
- Impact of forces, such as friction or gravity, on designs

Computing

- Using the internet and e-mails for research
- Developing databases
- Sorting, editing and organising information and presenting their findings
- Data logging

PSHE and Citizenship

- To work with others in planning and carrying out scientific investigations and solving problems
- Develop pupils' enquiry and communication skills and their ability to evaluate evidence and analyse interpretations
- The effects of drugs on the human body
- The importance of exercise and healthy eating
- Sex education
- How to keep safe
- How to care for other living things and look after the local environment

Spiritual, Moral, Social and Cultural

- To aesthetically appreciate wonders of the world including, for example, the beauty of natural objects or phenomenon, plants and animals.
- When considering the environment to think of how we use the Earth's resources and its effect on future generations
- To consider the benefits and drawbacks of scientific and technological developments and the social responsibility involved
- To understand how scientific discoveries from around the world have affected our lives.

Inclusion

We plan lessons in science to ensure all groups of learners are involved, including boys and girls, pupils with SEN, pupils with disabilities, Pupil Premium children, higher attainers, including Gifted and Talented children, pupils from all social and cultural backgrounds, children who are in care and those subject to safeguarding, pupils from different ethnic groups and those from diverse linguistic backgrounds.

Resources

Science equipment is stored centrally in the stock cupboard with some larger pieces in the cupboard in Sycamore cloakroom. Equipment should be removed by an adult and can be kept in the classroom for the duration of the topic. Once it has been used the equipment should be returned to the correct place. Resources can also be borrowed from the local secondary schools and external agencies such as the Health Promotion Unit.

Written teaching resources are located in the staff room. These should be borrowed and returned in the same way as the equipment. The school library contains a selection of books suitable for use by the children.

The science co-ordinator is responsible for the organisation and purchase of resources and should be informed of any broken or damaged equipment.

Most science is taught in the classroom. The school grounds and the local area provide opportunities for science work, particularly the pond, canal and river. Visits to the local farm, museums and education centres, such as Hams Hall, Brandon Marsh are also used.

Home-school Links

Parents are encouraged to support Science by

- Encouraging their children to find information through the use of books, ICT and discussions.
- Supporting in any homework activities.
- Supporting class teachers in visits.

Monitoring

The science co-ordinator monitors the teaching and learning of science by:

- Work trawls, usually undertaken each term.
- Lesson observations.
- Pupil interviews
- Monitoring of teacher planning.

Review

This policy was adopted in the March 2015 and will be reviewed in the year 2018.

